Amendments to the Specification

Please amend paragraph [0002] on page 1, to page 2, as follows:

[0002] In recent years, information terminal devices such as mobile phones and PDAs have become multifunctional, which makes it necessary for a user to learn various operation processes for fully utilizing all the functions thereof. However, only a portion of those various functions are frequently used by a user, and the same process is repeatedly performed for repeatedly executing the portion of those various functions. Thus, it is convenient if the information terminal device is able to learn a specific operation process or a habitual operation process usually performed by the user, and be able to anticipate a next operation for executing it automatically, or be able to advise the user which operation to do next. However, to the best of the ~~inventors'~~ inventor's knowledge, there is at present no conventional technique enabling the information terminal device to anticipate a next operation and execute it automatically, or advise the user which operation to do next. That is, there is no user-friendly information terminal device which is able to automatically set a series of operations unique to the user.

Please amend paragraph [0012] on page 5, as follows:

[0012] The operation anticipating section typically calculates a frequency ~~about~~ of a next operation subsequently operated after the operation previously input to the input section, based on the operation history information, and anticipates, based on the calculated frequency, a next operation having a highest probability of being subsequently executed, as a next operation to be input by the user. Here, the operation anticipating section preferably calculates the frequency in consideration of at least one operation subsequently executed before the operation input to the input section. Also, the operation anticipating section preferably calculates the frequency based on the operation history information every time an operation is input to the input section.

Please amend paragraph [0013] on page 5, to page 6, as follows:

[0013] In order to make operation anticipation ~~further~~ more precise, the user may be

allowed to select whether a frequency calculated based on the latest operation history information is used or a previously calculated frequency is used for anticipating a next operation. Also, the operation anticipating section may not anticipate a next operation if the operation history information stored in the operation history storing section is statistically insufficient for anticipating a next operation. Furthermore, the function automatically executed by the anticipated operation supporting section may previously correspond to each next operation to be anticipated by the operation anticipating section.

Please amend paragraph [0014] on page 6, as follows:

[0014] Furthermore, it is effective for the operation anticipating section to rule out a next operation, which is opposite or contradictory to the operation input to the input section and included in next operations subsequently executed after the operation input to the input section, as a next operation to be anticipated. It is also effective for the operation anticipating section to compare the automatically executed next operation with a new operation subsequently input to the input section, and reduce the likelihood that the next operation is to be anticipated if the automatically executed next operation and the new operation are opposite or contradictory to each other.

Please amend paragraph [0016] on page 7, as follows:

[0016] Also, the information terminal device of the present invention may further comprise an information managing section for managing special information about the operation input to the input section. In this structure, the operation history storing section is operable to store, as operation history information, information about the operation input to the input section along with the special information supplied from the information managing section, and the operation anticipating section is operable to anticipate a next operation to be input by the user, based on the operation history information, which includes the special information, stored in the operation history storing section. The special information may include a date, ~~a time, and a day of a week~~ time and day of week when the operation was input to the input section, a user type, an

area, and a traveling status.

Please amend paragraph [0022] on page 9, to page 11, as follows:

[0022] FIG. 1 is a block diagram showing the structure of an information terminal device according to a first embodiment of the present invention;

FIG. 2 is an exemplary operation input to an input section 11;

FIG. 3 is an illustration showing an example of operation history information stored in an operation history storing section 12;

FIG. 4 is an illustration showing an example of statistical information generated from the operation history information stored in the operation history storing section 12;

FIG. 5 is an illustration showing an example of an operation anticipation model generated by an operation anticipating section 13;

FIG. 6 is a flowchart showing a process performed by the operation anticipating section 13;

FIG. 7 is an illustration showing exemplary concrete operations assigned to respective anticipation operations;

FIG. 8 is a block diagram showing the structure of an information terminal device according to a second embodiment of the present invention;

FIG. 9 is a block diagram showing the structure of an information terminal device according to a third embodiment of the present invention;

FIG. 10 is an illustration showing an example of operation history information stored in an operation history storing section 32;

FIG. 11 is an illustration showing an exemplary operation anticipation model generated by an operation anticipating section 33;

FIG. 12 is a schematic diagram of a communication system including an information terminal device according to a ~~forth~~ fourth embodiment of the present invention; and

FIG. 13 is a schematic diagram of a communication system including an information terminal device according to a fifth embodiment of the present invention.

Please amend paragraph [0024] on page 11, to page 13, as follows:

[0024] First, an outline of each component of the information terminal device according to the first embodiment will be described. The input section 11 inputs an operation required by a user, and notifies the operation history storing section 12 of the requested operation. The operation history storing section 12 stores, temporarily or for a long term, information about the input operation notified by the input section 11~~, as an operation history~~ as an operation history. Based on the operation history information stored in the operation history storing section 12, the operation anticipating section 13 anticipates a next operation likely to be executed by the user. The operation supporting section 14 supports execution of a function corresponding to the operation anticipated by the operation anticipating section 13. Typically, the operation supporting section 14 supports execution of the above function in either the anticipated operation executing section 15 or the user notification section 16. Note that, as shown in FIG. 1, the operation supporting section 14 may include the anticipated operation executing section 15 and the user notification section 16. In this case, function selection, for example, is performed for selecting either the anticipated operation executing section 15 or the user notification section 16, and only the selected section operates. The anticipated operation executing section 15 automatically executes the operation anticipated by the operation anticipating section 13. Information about the operation automatically executed by the anticipated operation executing section 15 is stored in the operation history information of the operation history storing section 12 in a format indicating that the operation is automatically executed. The user notification section 16 compares the operation anticipated by the operation anticipating section 13 and the next operation actually input by the user to the input section 11. If the user does not perform the anticipated operation, the user notification section 16 notifies the user that the anticipated operation is not performed.

Please amend paragraph [0026] on page 13, to page 14, as follows:

[0026] An exemplary operation input to the input section 11 is shown in FIG. 2. A unique ID (operation ID) 201 is previously assigned to each concrete operation (function) 202 for

uniquely identifying the operation. In FIG. 2, for example, "game01" is an operation ID for starting a game A, and "mannerOn" is an operation ID for setting a manner mode ON. Which operation ID 201 is assigned to which concrete operation 202 depends on the function of the information terminal device, and is not limited to the example shown in FIG. 2. Also, as long as each operation can be uniquely identified, it is not necessary to associate each operation ID 201 with a corresponding concrete operation 202 as shown in FIG. 2. When an operation is input to the input section 11, the operation history storing section 12 is notified of the operation ID corresponding to the operation.

Please amend paragraph [0032] on page 18, to page 20, as follows:

[0032] In a case where the operation history information stored in the operation history storing section 12 is not sufficient for generating the operation anticipation model, the operation anticipation model to be generated has a low degree of accuracy. Thus, when the operation history information stored in the operation history storing section 12 is not sufficient for generating the operation anticipation model, the operation anticipating section 13 preferably does not generate the operation anticipation model, or preferably does not anticipate a next operation even if the operation anticipation model has been generated. Hereinafter, a case where the operation history information is not sufficient will be described by two examples. A first example is a case where the total number of single operations (category 43) is smaller than a predetermined threshold value. The predetermined threshold value depends on the number of operation types or the number of consecutive operations used for estimating a probability. For example, in order to ensure that an operation *b* is executed after an operation *a* over 20 times on average in a case where there are ten types of operations ~~operation~~ and anticipation is performed based on three consecutive operations, the threshold value is 2000 (=10×10×20). A second example is a case where the number of consecutive operations immediately before anticipation of a next operation is smaller than a predetermined threshold value. For example, if a frequency that the operation *b* was executed after the operation *a* is smaller than a threshold value 20, the determination is made that it is insufficient for obtaining a probability. In this case, what is

needed is not to generate the operation anticipation model with respect only to the consecutive operations whose frequency is determined to be insufficient for obtaining a probability.

Please amend paragraph [0035] on page 21, to page 22, as follows:

[0035] The operation anticipating section 13 temporarily stores the anticipated next operation (hereinafter, referred to as anticipated operation) (steps S603, S604). Note that, if the operation anticipating section 13 fails to anticipate the next operation, the operation anticipating section 13 goes back to step S601, and waits for a next operation by the user. After the anticipated operation is stored, the operation anticipating section 13 determines which supporting method is previously set by the user, ~~etc (step S605)~~ etc. (step S605). In a case where the supporting method is automatic execution, the operation anticipating section 13 notifies the anticipated operation executing section 15 of an operation ID of the anticipated operation (step S606). In a case where the supporting method is a user notification, the operation anticipating section 13 compares the operation currently input by the user with the last anticipated operation, which has been anticipated based on the last operation input by the user and temporarily stored (step S607). If the two operations coincide with each other, the operation anticipating section 13 goes back to step S601, and waits for a next operation by the user. If the two operations do not coincide with each other, the operation anticipating section 13 notifies the user notification section 16 that the two operations do not coincide with each other (step S608).

Please amend paragraph [0043] on page 26, to page 27, as follows:

[0043] The input section 11 inputs an operation required by the user, and notifies the operation detecting section 21 of the requested operation. The operation detecting section 21 notifies the operation history storing section 12 of only a specific operation, which is previously determined, among the operations notified by the input section 11. The above specific operation, which is notified to the operation history storing section 12 by the operation detecting section 21, is previously set by causing a developer or a user, etc., to select any desired operations from all the operations capable of being performed by the information terminal device. By setting the

above specific operation, it is possible to perform operation anticipation with respect only to an operation relating to a setting or performance of the information terminal device, that is, an operation such as application start-up or a performance setting of the information terminal device (an operation which the information terminal device can perform and determine immediately after it is activated from a standby state). The operation history storing section 12 stores, temporarily or for a long term, the operation information notified by the operation detecting section 21~~, as an operation history~~ as an operation history.

Please amend paragraph [0046] on page 28, to page 29, as follows:

[0046] The input section 11 inputs an operation required by the user, and notifies the information managing section 31 and the operation history storing section 32 of the requested operation. The information managing section 31 manages special information relating to operations, and notifies the operation history storing section 32 of the special information about the input operation notified by the input section 11. The above special information is, for example, a date, ~~a time, a day of a week,~~ time, day of week, a user type, an area, and a traveling status, etc., and any one of the information items or a combination thereof is used. The time information about a date, ~~a time, and a day of a week~~ time, and day of a week is managed by utilizing a clock function (not shown), etc., built in the information terminal device. The information about a user type is managed by an identification number, etc., used when the user logs on the information terminal device. The information about an area and a traveling status is managed by utilizing a positioning function (not shown), etc., using a GPS built in the information terminal device. Also, the information managing section 31 has various data converting functions, such as a function for converting a Christian year to a traditional era used in a specific country, or a function for calculating a date and a day of ~~a week~~ the week based on a time elapsed from a reference time.

Please amend paragraph [0047] on page 29, as follows:

[0047] The operation history storing section 32 stores, temporarily or for a long term, the

operation information input to the input section 11 and the special information notified by the information managing section 31, as an operation history. In FIG. 10, an example of operation history information using the time information, which is stored in the operation history storing section 32, is shown. In FIG. 10, a date of operation 1001 indicates information about a date when an operation has been executed. A day of ~~a~~ week 1002 indicates information about a day of ~~a~~ week when the operation was executed. A time 1003 indicates a time (hour: second: minute) when the operation was executed. Note that any data structure other than that shown in FIG. 10 may be used as long as each special information corresponds to an operation ID 1004.

Please amend paragraph [0049] on page 30, to page 31, as follows:

[0049] First, the operation history storing section 12 of the first embodiment stores an ~~a~~ operation history of operations consecutively performed without consideration of time intervals. For example, even when an operation is followed by another operation after the lapse of seven hours, those two operations are stored in the operation history storing section 12 as consecutive operations. As a result, in the first embodiment, there is a possibility that those unrelated two operations are determined as two consecutive operations, and an operation anticipation model is generated based thereon. In the third embodiment, however, time information is used for generating the operation anticipation model based only on ~~the~~ related consecutive operations, thereby realizing operation anticipation with further precision. For example, in the third embodiment, "alarm02" executed on July 1, 22:25:30 and "mannerOn" executed on July 2, 09:01:58, which are shown in FIG. 10, are not determined as two consecutive operations. Note that a time interval over which the two operations are not determined as two consecutive operations is set in consideration of a desired precision, etc., of operation anticipation.

Please amend paragraph [0050] on page 31, as follows:

[0050] Also, some consecutive operations may be intensively executed by the user on certain times of ~~a day~~ day or a certain day of ~~a week~~ the week. However, the operation history storing section 12 of the first embodiment cannot determine which consecutive operations are

intensively executed on certain times of ~~a day~~ day or a certain day of ~~a week~~ the week because the operation history information stored therein lacks time information. Thus, in the third embodiment, time information is used for generating an operation anticipation model whose consecutive operations are classified in consideration of a temporal relationship, thereby realizing operation anticipation with further precision. In FIG. 11, an exemplary operation anticipation model generated as described above is shown. In FIG. 11, among the operations executed after "game01", "volume00" has the highest probability value in a period of time from 22:00 through 18:00, and "mannerOn" has the highest probability value in a period of time from 18:00 through 22:00. Thus, in this case, the operation anticipating section 33 anticipates, as a next operation to be performed by the user, either "volume00" or "mannerOn" in accordance with a period of time when the user inputs an operation "game01".

Please amend paragraph [0054] on page 33 as follows:

[0054] Information about the operation input by the user is transmitted as data from the information terminal device 121 to the server 122. The server 122, which ~~has larger~~ has a larger storage capacity than the information terminal device 121, can perform processing faster than the information terminal device 121. The server 122 stores the information about the input operation, which is received from the information terminal device 121, in a predetermined storage area. Then, the server 122 anticipates a next operation based ~~baaed~~ on the stored information, and transmits the anticipation results to the information terminal device 121. The information terminal device 121 performs operation support for the anticipated operation based on the anticipation results received from the server 122.

Please amend paragraph [0057] on page 34, to page 35, as follows:

[0057] As such, according to the information terminal devices and the operation supporting methods of the ~~forth~~fourth and fifth embodiments of the present invention, it is possible to transmit data to the external component, which has a larger storage capacity and can perform processing faster than the information terminal device, for causing the external component to perform processing.